



UNITED STATES PATENT AND TRADEMARK OFFICE

dm
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,408	10/05/2005	Martin Zeller	70187	1697

26748 7590 02/28/2007
SYNGENTA CROP PROTECTION, INC.
PATENT AND TRADEMARK DEPARTMENT
410 SWING ROAD
GREENSBORO, NC 27409

EXAMINER

PUTTLITZ, KARL J

ART UNIT	PAPER NUMBER
----------	--------------

1621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/537,408

Applicant(s)

ZELLER, MARTIN

Examiner

Karl J. Puttlitz

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date various.

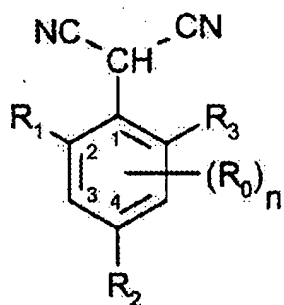
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

KARL PUTTLITZ
PATENT EXAMINER

2/21/2007

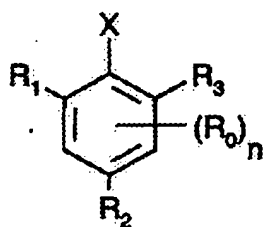
DETAILED ACTION***Prior art rejections***

The claims are drawn to inter alia, a process for the preparation of a compound of formula I



(I),

by reaction of a compound of formula II



(II),

[see definitions in claim 1]

with malonic acid dinitrile in an inert diluent in the presence of a palladium catalyst and a base, which process comprises using as the base a hydroxide of an alkali metal or a mixture of hydroxides of alkali metals.

The claims also cover those embodiments specifying the above reagents.

Art Unit: 1621

The claims also cover those embodiments wherein as palladium catalyst there is used a palladium(II) dihalide, palladium(II) acetate, palladium(II) sulfate, bis(triphenylphosphine)palladium(II) dichloride, bis(tricyclopentylphosphine)palladium(II) dichloride, bis(tricyclohexylphosphine)palladium(II) dichloride, bis(dibenzylideneacetone)palladium(0) or tetrakis(triphenylphosphine)palladium(0).

The claims also cover those embodiments wherein the palladium catalyst is prepared in situ from palladium(II) or palladium(0) compounds by complexing with phosphine ligands.

The claims also cover those embodiments wherein the palladium catalyst is used in an amount of from 0.001 to 100 mol % based on the compound of formula II.

The claims also cover those embodiments wherein as diluent there is used an aliphatic, cycloaliphatic or aromatic hydrocarbon, an aliphatic halohydrocarbon, a nitrile, an ether, an alcohol, a ketone, an ester or a lactone, an N-substituted lactam, an amide, an acyclic urea, a sulfoxide or water or a mixture of those diluents; specifically, as an aromatic hydrocarbon, there is used an ether, an N-substituted lactam, an amide, an acyclic urea or a sulfoxide, and specially, N-methylpyrrolidone is used.

The claims also cover those embodiments wherein as base there is used sodium hydroxide or potassium hydroxide or a mixture of sodium hydroxide and potassium hydroxide.

The claims also cover those embodiments specifying reaction parameters such as temperature, amounts of malonic acid dinitrile and pressure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

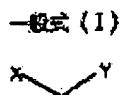
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000281636 (JP 636).

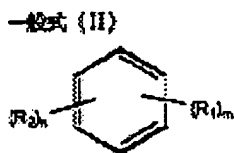
JP 636 teaches preparation of active methylene-substituted arene derivatives (III)



which comprises condensation of active methylene (I)



with aryl halide (II)



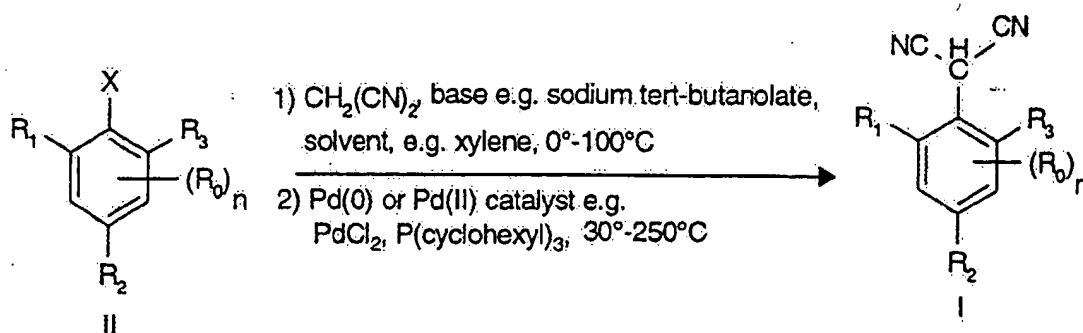
in the presence of a base and (1,1-bis (diphenylphosphino) ferrocene) palladium (II) chloride catalyst, wherein X, Y = substituent with Hammett's sigma p value of 0.2 or higher; R2 = substituent, plural R2s may complete an unsaturated condensed ring; m = 1-6; R1 = halogen; n = 0-5; and m + n = up to 6. Specially, the patent teaches preparation of dicyanomethyl) benzene derivatives, see attached DERWENT online abstract. With regard to the process parameters of solvent, temperature and pressure, these aspects of the invention are well within the motivation of those of ordinary skill for the purpose of optimizing the process, absent unexpected results to the contrary. Moreover, JP 636 teaches the structure of the claimed reagents and products with such particularity that the claimed reagents and products would be prima facie obvious.

The difference between the process set forth in JP 636 and the process covered by the rejected claims is that the process of JP 636 does not specifically recite hydroxides as bases. However, the term base, as disclosed by JP 636 strongly suggests those bases within the skill of the artisan, such as alkali metal hydroxides, such as sodium hydroxide. Accordingly, the rejected claims are prima facie obvious in view of JP 636 since this reference teaches or suggests the elements of the rejected claims with a reasonable expectation of success.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/78712 to NOVARTIS AG (WO 712).

Art Unit: 1621

WO 712 teaches substantially the same reaction as that instantly claimed, see for example, the following reaction at page 9:



See definitions at pages 1-8.

See catalysts at pages 10-11.

See solvents at pages 12-13.

See bases at page 13.

The difference between the process set forth in WO 712 and the process covered by the rejected claims is that the process of JP 636 does not specifically recite alkali metal hydroxides as bases. However, the bases disclosed by WO 712 strongly suggests others nucleophilic bases within the skill of the artisan, such as alkali metal hydroxides, such as sodium hydroxide. Accordingly, the rejected claims are prima facie obvious in view of WO 712 since this reference teaches or suggests the elements of the rejected claims with a reasonable expectation of success.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-

Art Unit: 1621

0645. The examiner can normally be reached on Monday to Friday from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page, can be reached at telephone number (571) 272-0602.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KARL PUTTLITZ
PATENT EXAMINER

2/21/07